

# Minimally invasive surgery treats gastroesophageal reflux disease (GERD) in infants and children



**Mattel Children's Hospital UCLA** is one of only a few centers nationwide where pediatric surgeons employ an advanced minimally invasive technique called laparoscopic Nissen fundoplication to treat infants and children diagnosed with severe gastroesophageal reflux disease (GERD). UCLA pediatric surgeons perform these minimally invasive procedures frequently on children — from newborns as young as 2 weeks old to adolescents — bringing a critical level of experience to treating this widespread condition.

In most newborns, the lower esophageal sphincter is lax, which makes spitting up common. While almost all infants have some degree of GERD, it is usually a short-term condition. An estimated 85 percent of premature infants develop GERD, and a majority of cases resolve without treatment as the esophageal sphincter becomes stronger, usually by 18 months. If the reflux is persistent or symptomatic — known as pathological reflux — the child may need medical or surgical intervention.

In addition, UCLA specialists routinely evaluate neurologically impaired children for GERD. Such cases often require a gastrostomy for feeding access in addition to Nissen fundoplication to treat reflux.

## Signs that children with reflux may need surgery

For most children, acid reflux symptoms will disappear over time. The minimally invasive Nissen fundoplication procedure may be recommended if a child has:

- Ongoing symptoms of heartburn that don't respond to medication
- Part of his/her stomach is twisted around itself or lodged in the chest
- Bleeding in the esophagus or a stricture or narrowing of the esophagus
- Problems growing at a normal rate or a diagnosis of failure to thrive
- A lung infection caused by aspiration pneumonia
- Hoarseness or a chronic cough caused by GERD
- Apparent life-threatening events proven to be secondary to reflux (such as apnea in an infant)

“In about 90 percent of the children on whom we perform surgery, the laparoscopic Nissen fundoplication is a permanent fix,” says James C. Dunn, MD, PhD, chief of pediatric surgery and professor with joint appointments in surgery and bioengineering.

## Diagnosing and treating GERD in children

GERD symptoms span a wide spectrum from mild and temporary to debilitating or even life-threatening for some newborns. In its more severe form, the condition can cause varying degrees of feeding difficulties, failure to thrive, respiratory complications and problems swallowing because of a narrowing of the esophagus.

Medical therapies to treat reflux in infants and children can include a change in feeding habits or medications that help speed the emptying of stomach contents into the intestine or reduce the volume of stomach acid. Indications for surgery may include failure of first-line medical therapies, and complications or life-threatening events due to GERD.

## Gold-standard surgical approach

Laparoscopic Nissen fundoplication is now considered the standard surgical approach for treatment of GERD, whether in adults or children. Identical to open Nissen fundoplication, the minimally invasive procedure strengthens the lower esophageal sphincter between the stomach and esophagus by wrapping the upper portion of the stomach, or fundus, a full rotation around the bottom of the esophagus.

Research findings from multiple reviews of a large number of children who had surgery for GERD suggest that laparoscopic fundoplication shortens the patient's postoperative hospital stay and reduces the average cost, with children going home three-to-five days after traditional open surgery and only one-to-two days after having Nissen fundoplication.\*

Conventional surgery requires a large incision, four to eight inches in length, depending on the size of the child. UCLA pediatric surgeons are leaders in helping to advance the field of minimally invasive surgery for GERD. Over time, improvements in technique have resulted in smaller instruments and incisions. At UCLA, surgeons make five small incisions — one a quarter inch in length in the fold of the belly button and four just one-eighth inch in length along the upper abdomen. This typically results in less injury to tissue, reduced blood loss and less post-operative pain, as well as faster recovery times. In addition, children generally experience less scarring after healing.

\* Rothenberg SS. The first decade's experience with laparoscopic Nissen fundoplication in infants and children. *J Pediatr Surg.* 40(1):142-7. January 2005.

Blewett CJ, et. al. Economic implications of current surgical management of gastroesophageal reflux disease. *J Pediatr Surg.* 37(3):427-30. March 2002.

## Participating Physicians

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